



US005678504A

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United States Patent [19]**Toplosky et al.**[11] **Patent Number:** **5,678,504**[45] **Date of Patent:** **Oct. 21, 1997**[54] **NEGATIVE LIFT DEVICE FOR TOW CABLE FAIRING**3,611,976 10/1971 Hale 114/243
4,075,967 2/1978 Silvey 114/243[75] **Inventors:** **Norman Toplosky**, Voluntown, Conn.;
Anthony A. Ruffa, Hope Valley, R.I.**Primary Examiner**—Jesus D. Sotelo**Attorney, Agent, or Firm**—Michael J. McGowan; Prithvi C. Lall; Michael F. Oglo[73] **Assignee:** **The United States of America as represented by the Secretary of the Navy**, Washington, D.C.[57] **ABSTRACT**

A towing cable is fitted with segmented fairings, each segment being further provided with a negative lift vane that is adjustable in orientation relative to the axis of the cable. Each vane has a channel shaped wing with the legs of the channel defining winglets one of which is attached at the inboard end of the wing to a strap that is pivotally mounted to the fairing at a point immediately behind or after the cable. The other end of the strap is releasably secured to the trailing edge of the fairing for locating the vane at a desired angle relative to the axis of the cable on which the fairing is mounted.

[21] **Appl. No.:** **668,604**[22] **Filed:** **Jun. 3, 1996**[51] **Int. Cl.⁶** **F15D 1/10**[52] **U.S. Cl.** **114/243**[58] **Field of Search** 114/243, 244;
405/211, 216[56] **References Cited****U.S. PATENT DOCUMENTS**

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5 Claims, 5 Drawing Sheets